

## NOTES ON SOME BALEARIC ARACEAE

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## ABSTRACT

A new subspecies of *Arum pictum* L. fil. (*A. pictum* subsp. *sagittifolium* Rosselló & L. Sáez) is described from the eastern Balearic Islands. It differs from *A. pictum* subsp. *pictum* (Corsica and Sardinia) by its leaves and shorter petioles. The taxonomic distinctiveness of *Dracunculus muscivorus* (L.) Parl. var. *caprariense* Romo is not supported by any morphological evidence and, on this basis, it seems justifiable to synonymize it with typical *D. muscivorus*. *Arum lucanum* Bonafè nom. inval. is a variant of *A. italicum* Miller and it does not merit of taxonomic recognition.

**Key words:** *Araceae*, Taxonomy, Balearic Islands.

## RESUM

## Notes sobre aràcies de Balears

Es descriu una nova subespècie d'*Arum pictum* L. fil. de les Balears orientals (*A. pictum* subsp. *sagittifolium* Rosselló & L. Sáez). Aquest tàxon es pot diferenciar de la subespècie tipus (Còrsega i Sardenya) perquè presenta les fulles sagitades i els peciols més curts. S'inclou *Dracunculus muscivorus* (L.) Parl. var. *caprariense* Romo dins de la sinonímia de *D. muscivorus* en sentit estricte. *Arum lucanum* Bonafè nom. inval. resulta indistingible de les formes de fulles pigmentades d'*A. italicum* Miller.

*Arum pictum* L. fil., Suppl. Pl.: 410 (1782)

With a distribution ranging from eastern Balearic Islands to the Tuscan archipelago, this species is one of the most outstanding members of the Tyrrhenian endemic element. Its peculiar morphology within the genus (inflorescence with a single upper zone of sterile flowers) and phenology (autumn flowering) has led some authors to create a taxon (*Gymnoesium*) at generic (SCHOTT, 1855), subgeneric (ENGLER, 1889) or sectional level (ENGLER, 1879) to accommodate it. All modern authors dealing with *A. pictum* have treated it as a single entity with no noticeable infraspecific diversification (CONTANDRIOPOULOS, 1962; PRIME & BUCKLE, 1969; DIANA CORRIAS, 1982; PIGNATTI, 1982; BOYCE, 1993).

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However, the study of herbarium specimens throughout its distribution range revealed several morphological differences between the western (Balearic islands) and eastern plants (Corsica and Sardinia). The shape of the leaves (fig. 1) is auriculate in the Balearic plants, whereas truncate and cordate outlines are present in the other areas. Scattered plants with auriculate leaves have been seen mixed with cordate ones in several corsical places, but in this case the auricles are shorter and more rounded. In fact, the auricle length measurements from the Balearics are different from the other plants (table 1). The petiole of the Balearic plants is significantly shorter and the blade is usually longer than the subtending petiole. The reverse is true in the eastern localities, where the petiole equals or barely exceeds the blade length. To our knowledge, reproductive organs are very similar in all localities; however the spathe is slightly wider and less acuminate in the Balearic plants. In the Balearics, flowering occurs when fully developed leaves have been produced, whereas in Sardinia that only few reduced leaves are present at anthesis (DIANA CORRIAS, l.c.). At present, we are not aware of the taxonomic implications, if any, of this apparently phenological diversity. The subtle, but otherwise clear and usually not overlapping, morphological discontinuities we have found within *A. pictum* are correlated with an insular allopatric pattern so a taxonomic recognition at the infraspecific (subspecific) level seems appropriate. Linne (1782) described *A. pictum* as having cordate leaves, which is in consistent with the shape of the leaves of the lectotype selected by BOYCE (1993: 170) at LINN (IDC 1079.9j). The origin of the *A. pictum* plants also pointed to non Balearic localities according to the protologue [Habitat A.S. Galliae Rege Ludovico XVI]. Therefore, the Balearic plant is described here:

***Arum pictum* L. fil. subsp. *sagittifolium* Rosselló & L. Sáez, subsp. nov.**

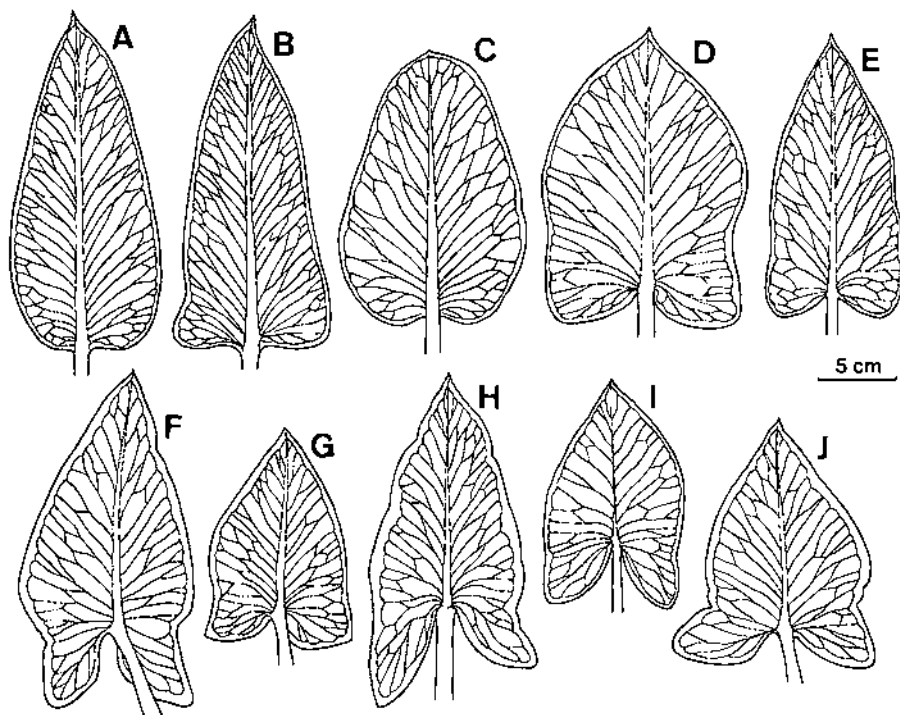
= *A. balearicum* Buc'hoz, Hist. Univ. 8: t.2 (1775), *nomen nudum* (cf. BOYCE 1993: 171)

*A subspecies typica foliis sagittatis, petiolis brevioribus differt.*

**Typus:** *Insulae Baleares, Majorica, ubi loco dicto Marina de Llucmajor, 315 DD76, 120 m alt., 14.XI.1995, J.A. Rosselló et L. Sáez legerunt* (VAB 971600 **holotypus**; herb. L. Sáez **isotypus**).

**Table 1.** Morphometric leaf features of both subspecies of *Arum pictum*. Measurements are given in cm: (minimum) median  $\pm$  standard deviation (maximum) values.

|               | <i>A. pictum</i> subsp. <i>pictum</i> | <i>A. pictum</i> subsp. <i>sagittifolium</i> |
|---------------|---------------------------------------|--|
| Blade         | (9.1)-17.1 $\pm$ 5.1-(30.1) n=54      | (10)-14.8 $\pm$ 4.1-(25.5) n=50              |
| Auricles      | (0)-1.4 $\pm$ 0.8-(3.5) n=54          | (1.6)-3.6 $\pm$ 1.5-(8.1) n=50               |
| Petiole       | (12)-22.2 $\pm$ 6.0-(36) n=37         | (3)-11.3 $\pm$ 6.1-(27) n=40                 |
| Blade/petiole | (0.4)-0.7 $\pm$ 0.2-(1.1) n=37        | (0.6)-1.8 $\pm$ 0.9-(5.5) n=40               |



**Figure 1.** Representative blades of *Arum pictum* subsp. *pictum* (A-E) and *A. pictum* subsp. *sagittifolium* (F-J). A: Corsica, environs de Bonifacio (G); B: Corsica, Ajaccio (FI); C: Bonifacio, maquis della Piantarella (G); D: Sardinia, marais de Bancamino (G); E: Sardinia, Bossa (FI); F,G: Majorca, sa Torre (Herb. L. Sáez); H: Majorca, entre el puig Tudosa i la Talaia Morcia (Herb. L. Sáez); I: Minorca, Villacarlos (BC 63403); J: Majorca, es cap Blanc (Herb. L. Sáez).

#### Material examined.

##### *Arum pictum* subsp. *sagittifolium*.

Majorca: S'Eserop [S'Esclop], *Font Quer*, 17.IV.1919 (BC 102614); Coll d'en Rebassa, rar al peu d'una roca ombrívola, vora les dunes artificials, *Palau*, 14.X.1947 (BC 106793); garrigas de Lluemajor, *Palau*, 9.XI.1951 (BC 121495); Formentor, entre roques, *Masclans*, 26.IV.1971 (BC 607535); replà calcari entre el Mal Pas i el cap Gros, 40-50 m, *Cardona & Masalles*, 9.V.1974 (BC 616939); Anà, Coll entre el puig Tudosa i la Talaia Morcia, *Mayol et al.*, 4.I.1996 (Herb. L. Sáez); Artà, vessant nord de la Talaia Morcia, *Mayol et al.*, 4.I.1996 (Herb. L. Sáez); cap Blanc, 95 m, *Sáez*, 27.I.1996 (Herb. L. Sáez); pas de sa Senyora, 120 m, *Sáez*, 27.I.1996 (Herb. L. Sáez); urbanització Sa Torre, 120 m, *Sáez*, 27.I.1996 (Herb. L. Sáez). Minorca: Mongofre Nou, *Rodríguez*, 13.XI.1865 (BC 660151); Villacarlos, *Rodríguez*, 19.XI.1878 (BC 63403); sa Mola de Fornells, sòl pedregós i sorrenc, dolomies juràssiques, *Cardona & Rita*, 7.V.1981 (BC 644580); sa Falconera, *Fraga*, 21.I.1996 (Herb. L. Sáez); Cavalleria, *Fraga*, 27.I.1996 (Herb. L. Sáez); Es Bennecks, *Fraga*, 31.I.1996 (Herb. L. Sáez).

##### *Arum pictum* subsp. *pictum*.

Corsica: Bonifacio, *Bernard*, 1846 (G); *ibidem*, *Requien*, 1850 (G); *ibidem*, lieux incultes, à la Trinité, *Reverchon*, 30.IX.1885 (G, MPU); *ibidem*, maquis della Piantarella, *Reverchon*, 26.X.1880 (G, MPU); *ibidem*, *Reverchon*, 1880 (G); *ibidem*, lieux ombragés et rocheux, sur le granit, 9.X.1894,

*Reverchon* (MA 18615); maquis à Bonifacio, Tillet, 16.X.1880 (FI); Près de la Trinité, environs de Bonifacio, *Stephani*, 15.XII.1903 (G, MPU); Bonifacio, à Saparicalli, terrain granitique, *Stephani*, 10.X.1902 (MPU); garrigues de Saint Liberato, près Bonifacio, 4.X.1894 (MPU); Ajaccio, *Requien*, 1846 (G); *ibidem*, *Bernard*, 1846 (G); *ibidem*, 1849 (FI); *ibidem*, *Sommier*, 17.II.1896 (FI); *ibidem*, *Bicknell & Pollini*, 8.X.1898 (G, FI); without precise locality, (G); without precise locality, *Tomas* (G). Sardinia: Without precise locality, frequens ad margines sylvarum sardiniac. 1842 (FI); marais de Bancanino, *Reverchon*, s.d. (G); Santa Teresa de Gallura, par Tempio, maquis de Bancanino, *Reverchon*, 10.X.1881 (G, MPU); in hostio speluncae Ulassaiensis, *Sommier*, 28.IV.1872 (FI); prope viam Jerzu, *Sommier*, 25.IV.1872 (FI); arcipelago di Madalena, In insula St. Stephano, frequens inter rudera, ad rupes et fruticetis Pistaciae lentisci, alt. 1-200 m. solo granitico, *Vaccari*, flor 15.XI.1905, folia 5.II.1906 (FI); Borsa, *Palazzo*, 12.XI.1919 (FI); Capo Sperone, Isola S. Antioco, *Milia & Massa*, 21.IV.1975 (CA); Iumini di Quantu S. Elena, *Zedda*, 14.X.1978 (CA); torre della Stella, *Marchoni*, XI.1985 (CA); Cannai, S. Antioco, 10.XI.1991 (CA).

***Dracunculus muscivorus* var. *caprariense* Romo, Fl. silvestres Balears: 393 (1994)**

Like *Arum pictum*, *D. muscivorus* (L.) Parl. has a distribution confined to the islands of the western Mediterranean basin, including all eastern Balearics. No single infraspecific variant was published of Balearic origin until the recent work of ROMO (1994), who shortly described a variety from Cabrera island on the basis of differences on the leaf segments (*A typica foliis laciniatis differt*). Further, he stated that the Capraian plants had leaves with narrow segments. The herbarium specimen referred by Romo as the type (BC 87551) bears no indication of such condition and, in addition, it is composed of two sheets. The first consists of a leafy flowering individual with a detached leaf. The second one has a single leaf of noticeable dimensions (segments of the blade up to 6 cm wide) with narrow segments up to 1.1 cm. From the protologue it should be concluded that the first sheet should be designated as the (lecto) type of *D. muscivorus* var. *caprariense*. A closer inspection revealed that it has folded leaves, so their segments looked narrower than usual due to the pressing process. In fact, the overall morphology and dimensions of the plants we have seen from Cabrera were not different from the other Balearic populations of *D. muscivorus*, as stated by ROMO (l.c.). Botanists who have focused their work on the Cabrera flora have never noticed the distinctiveness of the *D. muscivorus* populations (MARCOS, 1936; PALAU, 1976), despite the fact that the latter author, who described many taxa from that island, was very sensitive in detecting small variations on Balearic plants. The taxonomic recognition of the Cabrera plant is not supported by morphological evidence, and, on this basis, it seems justifiable to synonymize it with typical *D. muscivorus*.

**Material examined.**

Balearic Islands, Majorca: Artà, 2.IV.1855, *Marès & Viginetx* (MPU); vessant nord du puig de Ternelles, Pollença, 4.III.1855, *Marès & Viginetx* (MPU); cabo Formentor, 70 m, 15.V.1907, *Knoche* (MPU); Cosconar, a l'ombra d'una roca calcària, 12.V.1974, *Cardona & Masalles* (BC 616913); puig de Son Nassi, vessant S, Bunyola, Mallorca, 450 m, 7.I.1985, *Sáez* (Herb. L. Sáez). Minorca: without precise locality, *Canbessedes* (MPU); without precise locality, 9.VII.1912, *Knoche* (MPU); illa d'en Colom, serra platja, 9.IV.1973, *J. Farrerri* (BCC); Sa Mola de Fornells, sol pedregós i sorrenc, dolomies juràsiques, 7.V.1981, *Cardona & Rita* (BC 644581); Binissarri, llocs pedregós, 16.IV.1917, *F. Bianor* (BC 63376); Cala Mesquida, *Montserrat*, 19.III.1951 (BCF 607). Cabrera: without precise locality, 2.IV.1906, *Knoche* (MPU); l'Anciola, 19.IV.1948, *Palau* (BC 103594); idem, al costat de l'hort

del Far, lloc pedregós, 29.IV.1933, *Marcos* (BC 87551); cap Ventós, al peu de les roques, lloc ombrejat i humit, 28.IV.1933, *Marcos* (BC 87550); camp de Tir, sòl sorrenc i calcari, 20.III.1976, *Cardona* (BC 644484); s'Escumador, común en sitios umbríos y frescos, 28.V.1947, *Palau* (MA 18619). Sardinia. Isolotto Corcelli, nelli Arcipelago di Maddalena, IV.1896, *Vaccari* (MA 18579).

***Arum lucanum* Bonafè, Fl. Mallorca I: 259 (1977)**

Majorcan populations resembling *A. italicum* Miller with black-purple spots on the leaves have received taxonomic distinction since the work of CHODAT (1924), who described them as *A. majoricense*. The study of the insular variability of *A. italicum* led PERICÁS *et al.* (1987) to conclude that only one specific entity, *A. italicum*, was present in the archipelago and that the spotted individuals, nearly always mixed with unspotted ones, could be recognised at the lowest taxonomic rank as a forma. This view has recently been followed by BOYCE (1993) who, notwithstanding, did not recognize this spotted variant. No mention was made in either study to *A. lucanum* Bonafè [*nomen invalidum* without Latin diagnosis and type designation, *non A. lucanum* Cavara & Grande, Bull. Orto Bot. Regia Univ. Napoli 3: 409 (1991)] described from a single locality in the mountains of Majorca (BONAFÈ, 1977). This entity was differentiated from *A. majoricense* on the basis of larger spots on the leaves, larger spathes and spadix. However, the author cast some doubts on the consistency of his taxon, and suggested that *A. majoricense* and *A. lucanum* were merely variants or hybrids (sic) of *A. italicum*. Recently, ROMO (1994) transferred *A. lucanum* at the subspecific level to *A. majoricense*, which he discriminate from *A. italicum* by its narrower, spotted leaves. Since, at the moment, the Bonafè herbarium was not available for study, we visited the type locality (Lluc) to search for *A. lucanum*-like plants. The individuals found are indistinguishable from the other spotted populations of *A. italicum* from Majorca. The morphological boundaries drawn by BONAFÈ (1977) and ROMO (1994) for *A. lucanum* and *A. majoricense* do not even reflect their intrapopulation variability. We maintain the view, earlier expressed (PERICÁS *et al.*, 1987), about the taxonomic value of *A. majoricense*, which is the same for *A. lucanum*. We feel that whether such black-purple spotted populations, otherwise not restricted to the Balearics (BOYCE, 1993 and references therein), should be granted a formal name is, ultimately, a question of taste, but, in either case, such treatment should be coherent throughout the genus, since this fact is not restricted to *A. italicum*.

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